

## ABSTRACT

A flip chip semiconductor device having non-solder contact terminals is assembled by securing the chip and  
5 substrate with a rapidly thermosetting adhesive. The process is amenable to various bump and substrate materials, and has the advantage of simultaneously adhering the components and of providing a void free underfill. The process makes use of absorption of infrared energy by the chip to heat the  
10 adhesive and cause it to flow prior to rapidly solidifying from the center outwardly. The rapid assembly, using a simple infrared exposure apparatus is compatible with reel to reel, or other highly automated in-line processes.